We claim:

1. A gas sensor for oxides of nitrogen assembly comprising:

(a) an electrolyte comprising:

(i) one or more alkali metal nitrates;

(ii) one or more alkaline earth metal nitrates; and

(iii) one or more reference electrode metal halogens, wherein the reference electrode metal of the reference electrode metal halogens is chosen from the group consisting of ruthenium, rhodium, palladium, rhenium, osmium, iridium, platinum and gold and the halogens of the reference metal halogens are chlorine, bromine or iodine;

(b) the electrolyte in electrochemical connection between a sensing electrode and a reference electrode, whereby the reference electrode consists of a first reference electrode metal and the sensing electrode consists of any other reference electrode metal; and

(c) the electrolyte and electrodes are supported on a substrate.

2. The sensor of claim 1 wherein the concentration of alkali metal nitrates is greater than about 20 weight percent of the total weight of alkali metal nitrates, alkaline earth metal nitrates, and reference electrode metal halogens.

3. The sensor of claim 1 wherein the concentration of reference electrode metal halogens is greater than about 0.005 weight percent of the total weight of alkali metal nitrates, alkaline earth metal nitrates, and reference electrode metal halogens.

4. The sensor of claim 1 wherein the substrate comprises a thin layer having adhered to a top side the electrolyte, the electrodes and a reference temperature detector and on a bottom side a thin layer heater adapted to raise the temperature of the electrolyte to an operating temperature.

5. The sensor of claim 1 wherein the substrate comprises a thin layer having adhered to a top side the electrolyte, the electrodes and a reference temperature detector and on the top side a thin layer heater adapted to raise the temperature of the electrolyte to an operating temperature.

6. The sensor of claim 1 wherein a circuit connection is made between the electrodes, such that a voltage across the electrodes and the electrolyte is capable of being measured.

7. The sensor of claim 1 wherein the electrolyte is sealed against a gas environment such that its gas components pass through a composite membrane to the electrolyte and the composite membrane is capable of substantially excluding one or more non-sensed gas components.

8. The sensor of claim 7 wherein the composite membrane has a hydrophobic layer sealing a support layer against the gas environment.

9. The sensor of claim 8 where the hydrophobic layer is a fluorine-containing polymer.

10. The sensor of claim 7 where the support layer comprises dessicant material.